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EXAMINER	
MERLIN, JESSICA M	

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2871	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/550,369	SASABAYASHI, TAKASHI	
	Examiner	Art Unit	
	JESSICA M. MERLIN	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8 and 9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8 and 9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Receipt is acknowledged of applicant's amendment filed February 23, 2011. Claims 7 and 10-18 have been cancelled without prejudice. Claims1-6, 8 and 9 are pending and an action on the merits is as follows.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andry et al. (U.S. 6,724,449 B1) in view of Konuma et al. (U.S. 7,227,603 B1) and further in view of Suzuki et al. (U.S. 2002/0080320 A1).

In regard to claim 1, Andry et al. discloses a liquid crystal display device comprising a liquid crystal layer **Liquid Crystal** and a pair of electrodes **ITO, ITO Layer** for applying voltage onto the liquid crystal installed on both sides of said liquid crystal layer **Liquid Crystal**, the liquid crystal layer **Liquid Crystal** and pair of electrodes **ITO, ITO Layer** being sandwiched by a pair of substrates **Glass, Glass**, wherein *(see e.g. Figures 4-6)*:

an alignment controlling section or sections **401** formed from a polymerizable compound that has been polymerized that show an effect to control the alignment directions *(see e.g. Column 6, lines 37-44, where it is noted that element 401 is a polymer wall),*

said section or sections **401** obtained by the selective irradiation of active energy rays are installed on either on of the surfaces only which contact the liquid crystal layer to define liquid crystal layer contacting surfaces, or each independently on both of the surfaces wherein none of the alignment direction controlling section or sections contact both substrates *(see e.g. Column 6, lines 37-44 where it is noted that the element 401 is on the top substrate and Figure 6 where the alignment controlling section does not contact both substrates).*

Note that the product by process limitations, " . . . that has been polymerized . . . " and "obtained by the selective irradiation of active energy rays . . ." have been fully considered by the examiner. However, it is further noted that the patentability of a product does not depend on its method of production *(see e.g. MPEP 2113).*

Andry et al. is silent as to

said alignment controlling section or sections directly contact said liquid crystal layer,

a first polarizer and a second polarizer are installed each on one of the outer sides of said pair of substrates so that the absorption axes of the two polarizers are perpendicular to each other;

a first 1/4 wavelength plate is installed between one of said substrates and the first polarizer;

a second 1/4 wavelength plate is installed between the other one of said substrates and the second polarizer; and

the absorption axis of the first polarizer is at 45° from the phase delay axis of the first 1/4 wavelength plate, the absorption axis of the second polarizer is at 45° from the phase delay axis

of the second 1/4 wavelength plate, and the phase delay axis of the first ¼ wavelength plate and the phase delay axis of the second 1/4 wavelength plate are perpendicular to each other.

However, Konuma et al. discloses

said alignment controlling section **27** or sections directly contact said liquid crystal layer **26** *(see e.g. Figure 3 and Column 16, lines 45-57).*

Given the teachings of Konuma et al., it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the display device of Andry et al. with said alignment controlling section or sections directly contact said liquid crystal layer.

Doing so would provide protrusions on the surface of the alignment layer which allows the alignment layer to be treated with an orienting method such as rubbing prior to the formation of the protrusions which allows the layer to be rubbed evenly, without obstruction.

Andry et al., in view of Konuma et al., fails to disclose

a first polarizer and a second polarizer are installed each on one of the outer sides of said pair of substrates so that the absorption axes of the two polarizers are perpendicular to each other;

a first 1/4 wavelength plate is installed between one of said substrates and the first polarizer;

a second 1/4 wavelength plate is installed between the other one of said substrates and the second polarizer; and

the absorption axis of the first polarizer is at 45° from the phase delay axis of the first 1/4 wavelength plate, the absorption axis of the second polarizer is at 45° from the phase delay axis

of the second 1/4 wavelength plate, and the phase delay axis of the first ¼ wavelength plate and the phase delay axis of the second 1/4 wavelength plate are perpendicular to each other.

However, Suzuki et al. discloses

a first polarizer **720** and a second polarizer **720** are installed each on one of the outer sides of said pair of substrates **701, 707** so that the absorption axes of the two polarizers are perpendicular to each other *(see e.g. paragraph [0070])*;

a first ¼ wavelength plate **721** is installed between one of said substrates **701** and the first polarizer **720**;

a second ¼ wavelength plate **721** is installed between the other one of said substrates **707** and the second polarizer **720**; and

the absorption axis of the first polarizer **720** is at 45° from the phase delay axis of the first ¼ wavelength plate **721**, the absorption axis of the second polarizer **720** is at 45° from the phase delay axis of the second ¼ wavelength plate **721**, and the phase delay axis of the first ¼ wavelength plate **721** and the phase delay axis of the second ¼ wavelength plate **721** are perpendicular to each other *(see e.g. paragraph [0081] and Figure 8)*.

Given the teachings of Suzuki et al., it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the display device of Andry et al., in view of Konuma et al., with a first polarizer and a second polarizer are installed each on one of the outer sides of said pair of substrates so that the absorption axes of the two polarizers are perpendicular to each other; a first 1/4 wavelength plate is installed between one of said substrates and the first polarizer; a second 1/4 wavelength plate is installed between the other one of said substrates and the second polarizer; and the absorption axis of the first polarizer is at 45° from the phase delay

axis of the first 1/4 wavelength plate, the absorption axis of the second polarizer is at 45° from the phase delay axis of the second 1/4 wavelength plate, and the phase delay axis of the first ¼ wavelength plate and the phase delay axis of the second 1/4 wavelength plate are perpendicular to each other.

Doing so would provide a means for operating the display device as a switching element and for compensating the effects of the birefringence of the liquid crystal molecules, which may become detrimental to the display quality.

In regard to claim 2, Andry et al. discloses said liquid crystal layer has a section **401** obtained by polymerizing said polymerizable compound in the presence of said liquid crystal through selective irradiation of active energy rays over the substrate surface without applying voltage to said liquid crystal *(see e.g. Figure 4).*

Note that the product by process limitation, " . . . obtained by polymerizing said polymerizable compound in the presence of said liquid crystal through selective irradiation of active energy rays over the substrate surface without applying voltage to said liquid crystal . . . " has been fully considered by the examiner. However, it is further noted that the patentability of a product does not depend on its method of production *(see e.g. MPEP 2113).*

In regard to claim 3, Andry et al. discloses said liquid crystal layer has a section **401** obtained by polymerization through selective irradiation of active energy rays followed by irradiation of active energy rays all over the substrate surface with voltage application *(see e.g. Figure 4).*

Note that the product by process limitation, " . . . obtained by polymerization through selective irradiation of active energy rays followed by irradiation of active energy rays all over

the substrate surface with voltage application . . . " has been fully considered by the examiner. However, it is further noted that the patentability of a product does not depend on its method of production *(see e.g. MPEP 2113).*

In regard to claim 4, Andry et al. discloses at least one of said two irradiations of active energy rays has been carried out along a direction tilted from the normal to the substrate surface.

Note that the product by process limitation, " . . . at least one of said two irradiations of active energy rays has been carried out along a direction tilted from the normal to the substrate surface . . . " has been fully considered by the examiner. However, it is further noted that the patentability of a product does not depend on its method of production *(see e.g. MPEP 2113).*

In regard to claim 5, Andry et al., in view of Konuma et al., discloses the above limitations, but fails to explicitly disclose said liquid crystal layer shows a specific light shielding pattern caused by the alignment of liquid crystal molecules when a voltage is applied after said irradiation or irradiations of active energy rays.

However, Suzuki et al. discloses said liquid crystal layer **308** shows a specific light shielding pattern caused by the alignment of liquid crystal molecules **308** when a voltage is applied after said irradiation or irradiations of active energy rays *(see e.g. Figure 8 and note that the pattern is the result of the molecules moving under an applied electric field in combination with the polarizers sandwiching the cell).*

Given the teachings of Suzuki et al., it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the liquid crystal display device of Andry et al., in view of Konuma et al., with said liquid crystal layer shows a specific light shielding pattern

caused by the alignment of liquid crystal molecules when a voltage is applied after said irradiation or irradiations of active energy rays.

Doing so would provide a means for operating the display device as a switching element and for compensating the effects of the birefringence of the liquid crystal molecules, which may become detrimental to the display quality.

Note that the product by process limitation, " . . . after said irradiation or irradiations of active energy rays . . . " has been fully considered by the examiner. However, it is further noted that the patentability of a product does not depend on its method of production *(see e.g. MPEP 2113)*.

In regard to claim 6, Andry et al., in view of Konuma et al., discloses is silent as to said pattern caused by the alignment of liquid crystal molecules comprises at least one pattern selected from the group consisting of a lattice pattern, a crisscross pattern, a pattern in the shape of stripes and a pattern in the shape of stripes with bends.

However, Suzuki et al. discloses said pattern caused by the alignment of liquid crystal molecules comprises at least one pattern selected from the group consisting of a lattice pattern, a crisscross pattern, a pattern in the shape of stripes and a pattern in the shape of stripes with bends *(see e.g. Figure 8 and note that the pattern is the result of the molecules moving under an applied electric field in combination with the polarizers sandwiching the cell).*

Given the teachings of Suzuki et al., it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the display device of Andry et al., in view of Konuma et al., with said pattern caused by the alignment of liquid crystal molecules comprises at

least one pattern selected from the group consisting of a lattice pattern, a crisscross pattern, a pattern in the shape of stripes and a pattern in the shape of stripes with bends.

Doing so would provide a means for operating the display device as a switching element and for compensating the effects of the birefringence of the liquid crystal molecules, which may become detrimental to the display quality.

In regard to claim 8, Andry et al. discloses at least one means selected from the group consisting of protrusions, depressions and a slit pattern in an electrode is installed on the liquid crystal layer contacting surfaces which contact the liquid crystal layer *(see e.g. Figures 4-6).*

In regard to claim 9, Andry et al. discloses said liquid crystal has negative dielectric constant anisotropy *(see e.g. Column 5, lines12-15)*, and is aligned in the direction vertical to the substrate surface when no voltage is applied after said irradiation or irradiations of active energy rays *(see e.g. Column 7, lines 17-20 and 24-26).*

Note that the product by process limitation, " . . . after said irradiation or irradiations of active energy rays . . . " has been fully considered by the examiner. However, it is further noted that the patentability of a product does not depend on its method of production *(see e.g. MPEP 2113).*

Response to Arguments

4. Applicant's arguments with respect to claims 1-6, 8 and 9 have been considered but are moot in view of the new ground(s) of rejection.

5. In regard to independent claim 1, applicant's arguments, on pages 6-7 of the Remarks, that the previously applied prior art fails to disclose the limitation, "said alignment controlling section or sections directly contact said liquid crystal layer." However, the newly cited reference

to Konuma et al. discloses said alignment controlling section **27** or sections directly contact said liquid crystal layer **26** *(see e.g. Figure 3 and Column 16, lines 45-57).* The motivation for combining Andry et al. with Konuma et al. is to provide protrusions on the surface of the alignment layer which allows the alignment layer to be treated with an orienting method such as rubbing prior to the formation of the protrusions which allows the layer to be rubbed evenly, without obstruction.

6. Therefore, claims 1-6, 8 and 9 are rejected.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA M. MERLIN whose telephone number is (571)270-3207. The examiner can normally be reached on Monday-Friday 6:30AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jessica M. Merlin
May 9, 2011

/Jessica M. Merlin/
Examiner, Art Unit 2871